



NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY				
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

## Work Order ID 94463

\*94463\*

Page 2

December-19-12 11:15:12 AM

Item ID: D3649-041

Accept

\*N9000040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Tunnel Bottom Panel Assembly

Start Date: 12/19/12 Start Qty: 2.00

\*2\*

Cust Item ID:

Required Date: 1/11/13 Req'd Qty: 2.00

\*2\*

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start \*NR1\*

QC: Date: SPC (Y/N): Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

0.00

\*130\*

NC BRAKE

Brake NC

Memo

0.00

Brake NC

Form as per Dwg D3649

140

0.00

\*140\*

QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

150

0.00

\*150\*

Small Fab

Small Fab

Memo

0.00

Small Fab

1- Form dimple for MS20427M3 rivet per dwg D3649\*\*\*\*\*ensure dimples are on the proper side\*\*\*\*\*2-Assemble nutplates as per dwg D3649

JH  
13/6/12DAS  
15  
2-89  
13.1.12

10

9x

13/01/23

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY			
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other

# Work Order ID 94463

\*94463\*

Page 3

December-19-12 11:15:12 AM

Item ID: D3649-041

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Tunnel Bottom Panel Assembly

Start Date: 12/19/12 Start Qty: 2.00

\*2\*

Cust Item ID:

Required Date: 1/11/13 Req'd Qty: 2.00

\*2\*

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC5- Inspect part completeness to step on W/O	0.00							
*160*									
QC	Memo	0.00							
Quality Control									
170	Identify as per dwg & Stock Location:	0.00							
*170*									
Packaging	Memo	0.00							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
*180*									
QC	Memo	0.00							
Quality Control									

DAS  
16  
9-08 13/1/24

(49)

57183

GA

2 FAD2

93/4/25 (9)

13/1/28

UNF 25  
13-1-2015

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	<b>Date</b>	<b>Step</b>	<b>Qty</b>	<b>Description of work order update or Non-conformance</b>	<b>Initial Chief Eng</b>	<b>Action Description</b>	<b>Sign &amp; Date</b>	<b>Verification</b>	<b>QC Inspector</b>		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY			
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other

# Picklist Print

December-19-12 11:15:11 AM

Page 1

Work Order ID: 94463

Parent Item: D3649-041

Start Date: 12/19/12

Required Date: 1/11/13

Parent Item Name: Tunnel Bottom Panel Assembly

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A New Issue 07-09-26 EC verified by: DD  
IPP Rev:B ECN 1113P 08-01-22 DD verified by: EC  
IPP Rev:C Ecn1162 08-04-02 DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S26GA 304/316 0.018 SHEET		Purchased	No			150	sf	422.3400	6.069	12.776842		B3-1-8	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				MAT020		422.34							
				117798		69.28							
				122753		97.06							
				123135		256							
MS20427M3-3 Rivet		Purchased	No			110	Each	155.0000	88	176		12/31/23	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				GA		155							
				123352		155							
MS21060-3K Nut Plate		Purchased	No			150	Each	27.0000	22	44		12/31/23	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST316		27							
				123168		27							
MS21062-3K Nut Plate		Purchased	No			150	Each	20.0000	22	44		12/31/23	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST317		20							
				122452		20							

M124316  
208x

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	<b>Date</b>	<b>Step</b>	<b>Qty</b>	<b>Description of work order update or Non-conformance</b>	<b>Initial Chief Eng</b>	<b>Action Description</b>	<b>Sign &amp; Date</b>	<b>Verification</b>	<b>QC Inspector</b>		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY				
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	94463
<b>Description:</b> Tunnel Bottom Panel		<b>Part Number:</b>	D3649-1
<b>Inspection Dwg:</b> D3649 <b>Rev:</b> B		<b>Page 1 of 2</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**
                 
 ☐ **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.098	+0.004/-0.001	.101	2		✓ B2	
Ø0.196	+0.005/-0.001	.199	2		✓	
Ø0.250	+0.005/-0.001	.252	2		✓	
0.400	+/-0.010	.401	2		✓	
0.385	+/-0.010	.388	2		✓	
0.250	+/-0.010	.251	2		✓	
44.57	+/-0.030	44.57	2		T B4	
11.70	+/-0.030	11.696	2		T	
3.370	+/-0.030	3.368	2		✓	
13.76	+/-0.030	13.75	2		T	
4.300	+/-0.010	4.298	2		✓	
10.11	+/-0.030	10.106	2		T	
12.90	+/-0.030	12.90	2		T	
16.61	+/-0.030	16.61	2		T	
15.80	+/-0.030	15.80	2		T	
3.950	+/-0.010	3.947	2		✓	
0.42	+/-0.030	.417	2		✓	
0.41	+/-0.030	.417	2		✓	
0.85	+/-0.030	.852	2		✓	
19.64	+/-0.030	19.64	2		T	
0.54	+/-0.030	.54	2		✓	
1.400	+/-0.010	1.400	2		✓	
2.63	+/-0.030	2.629	2		✓	
2.93	+/-0.030	2.911	2		✓	
1.49	+/-0.030	1.49	2		✓	
5.98	+/-0.030	5.983	2		✓	
0.54	+/-0.030	.543	2		✓	
2.20	+/-0.030	2.197	2		✓	
2.75	+/-0.030	2.749	2		✓	
2.48	+/-0.030	2.473	2		✓	

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	94463
<b>Description:</b> Tunnel Bottom Panel		<b>Part Number:</b>	D3649-1
<b>Inspection Dwg:</b> D3649	<b>Rev:</b> B	<b>Page 2 of 2</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

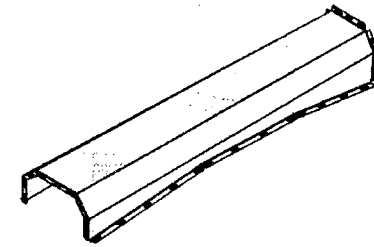
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.16	+/-0.030	1.163	2		✓ 1B2	
3.38	+/-0.030	3.377	2		✓	
2.00	+/-0.030	2.00	2		✓	
0.90	+/-0.030	.901	2		✓	
16.64	+/-0.030	16.64	2		T 1B4	
0.48	+/-0.030	.479	2		✓	
13.80	+/-0.030	13.80	2		T	
0.46	+/-0.030	.461	2		✓	
11.76	+/-0.030	11.76	2		T	
1.23	+/-0.030	1.210	2		✓	
0.88	+/-0.030	.881	2		✓	
18.46	+/-0.030	18.46	2		T	
5.23	+/-0.030	5.236	2		✓	
1.932	+/-0.010	1.937	2		✓	
1.943	+/-0.010	1.940	2		✓	
5.02	+/-0.030	5.024	2		✓	
1.820	+/-0.010	1.823	2		✓	
0.70	+/-0.030	.701	2		✓	
2.100	+/-0.010	2.099	2		✓	
2.33	+/-0.030	2.337	2		✓	
0.94	+/-0.030	.938	2		✓	
3.30	+/-0.030	3.291	2		✓	
1.900	+/-0.010	1.901	2		✓	
0.61	+/-0.030	.613	2		✓	

<b>Measured by:</b> RB	<b>Audited by:</b> 15	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 13-1-8	<b>Date:</b> 13-1-10	<b>Date:</b>	N/A

<b>Rev</b>	<b>Date</b>	<b>Change</b>	<b>Revised by</b>	<b>Approved</b>
A	08.04.17	New Issue	KJ/DD	DS

SHOP COPY  
 RETURN TO  
 ENGINEERING  
 UNCONTROLLED  
 SUBJECT TO APPROVAL  
 WITHOUT NOTICE  
 WORK ORDER  
 NO. 94463 MLJ  
 12-12-19

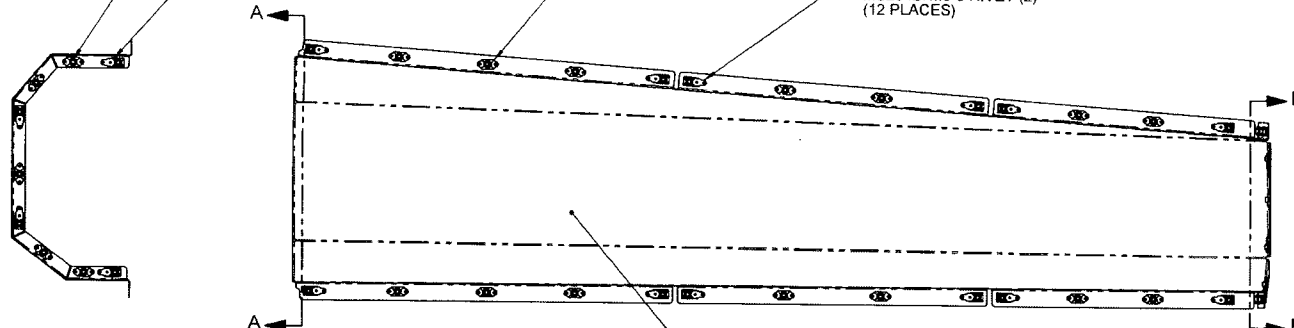


MS21060-3K NUTPLATE (1)  
 MS20427M3-3 RIVET (2)  
 (5 PLACES)

MS21062-3K NUTPLATE (1)  
 MS20427M3-3 RIVET (2)  
 (4 PLACES)

MS21060-3K NUTPLATE (1)  
 MS20427M3-3 RIVET (2)  
 (14 PLACES)

MS21062-3K NUTPLATE (1)  
 MS20427M3-3 RIVET (2)  
 (12 PLACES)



SECTION A-A

D3649-1 TUNNEL BOTTOM PANEL

MS21060-3K NUTPLATE (1)  
 MS20427M3-3 RIVET (2)  
 (3 PLACES)

MS21062-3K NUTPLATE (1)  
 MS20427M3-3 RIVET (2)  
 (6 PLACES)

SECTION B-B

**D3649-041 BOTTOM PANEL ASSEMBLY**

**PART LIST**

QTY -041	PART NUMBER	DESCRIPTION
X	D3649-041	TUNNEL BOTTOM PANEL ASSY.
1	D3649-1	TUNNEL BOTTOM PANEL
88	MS20427M3-3	RIVET
22	MS21060-3K	NUTPLATE
22	MS21062-3K	NUTPLATE

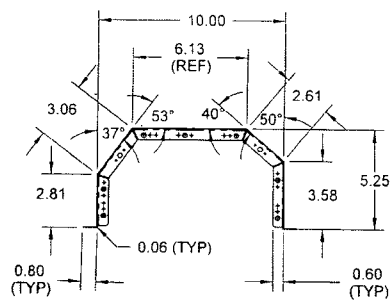
RELEASED  
 08-03-28

B	PAGE 3: MS20427M3 WAS MS20427M-3	RF	08.01.07
A	NEW ISSUE	RF	07.11.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED	IE		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.01.07		

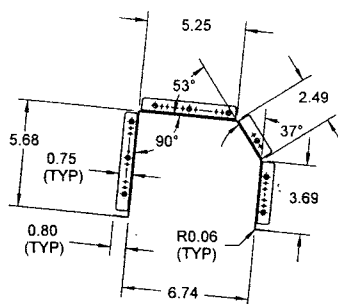
<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. <b>D3649</b>	REV. B SHEET 1 OF 3
TITLE <b>BOTTOM PANEL ASSEMBLY</b>	
SCALE 1:5	

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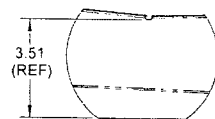
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**SECTION C-C**



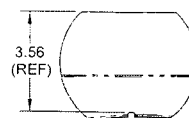
**SECTION D-D**



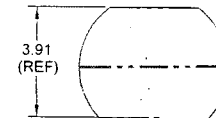
**DETAIL E**



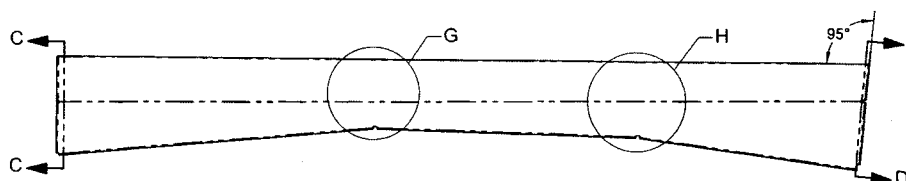
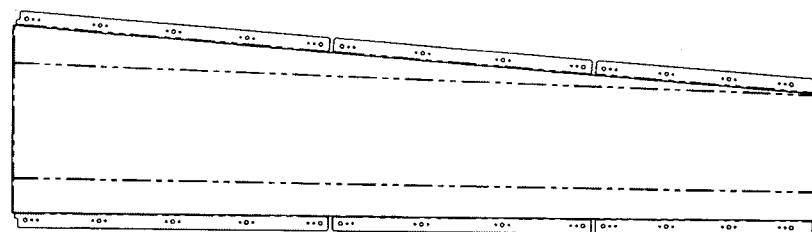
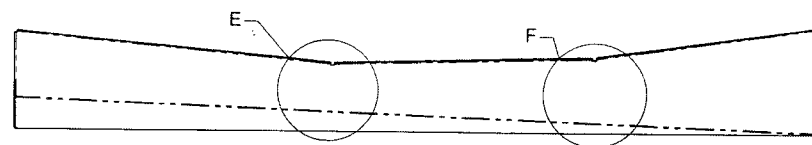
**DETAIL F**



**DETAIL G**



**DETAIL H**

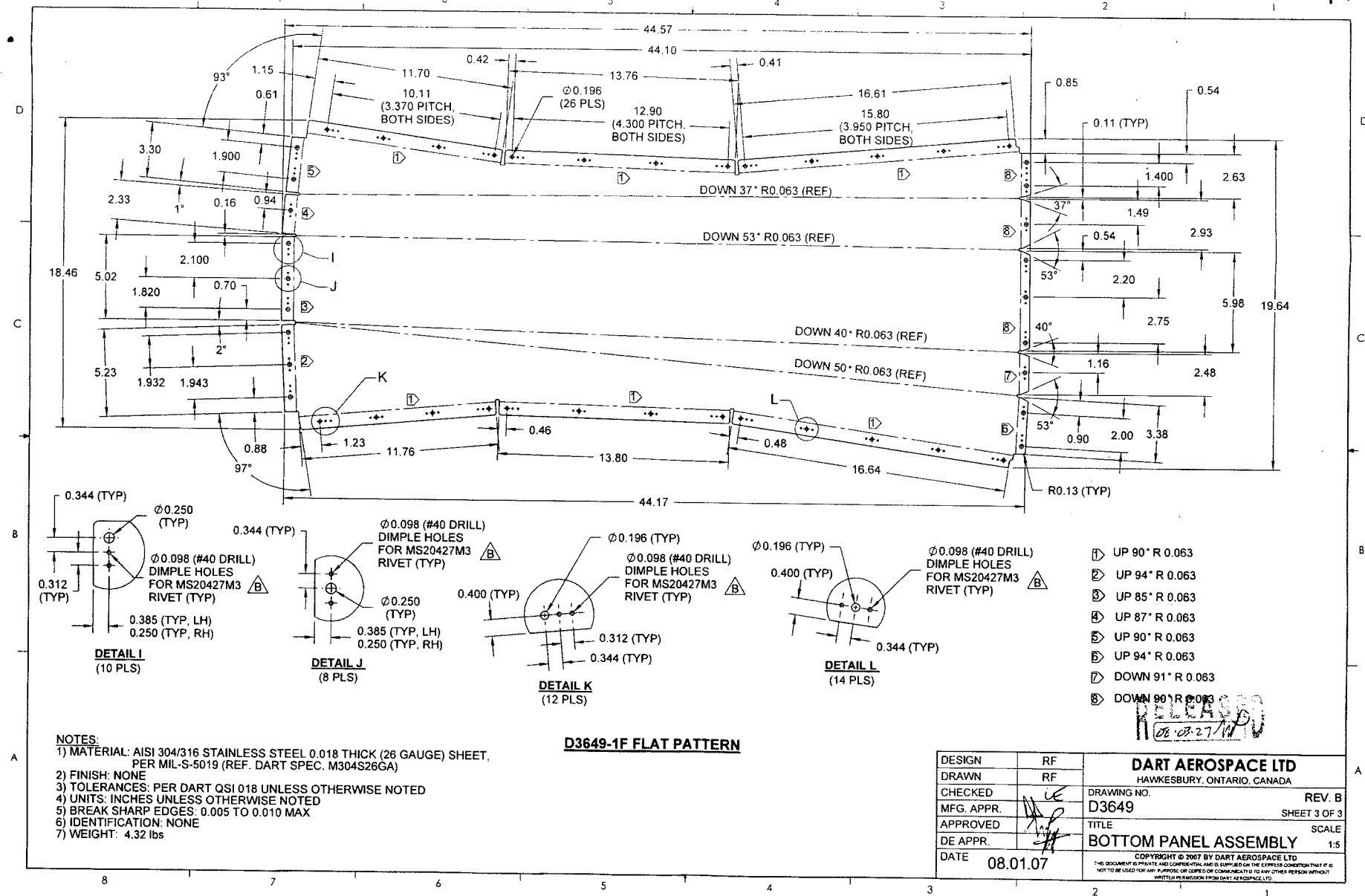


**D3649-1 TUNNEL BOTTOM PANEL**  
(MAKE FROM D3649-1F)

RELEASED  
08.03.27/14P

DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3649	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		BOTTOM PANEL ASSEMBLY	1:6
DATE	08.01.07	COPYRIGHT © 2007 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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- NOTES:**
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 THICK (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
  - 2) FINISH: NONE
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: NONE
  - 7) WEIGHT: 4.32 lbs

**D3649-1F FLAT PATTERN**

- ① UP 90° R 0.063
- ② UP 94° R 0.063
- ③ UP 85° R 0.063
- ④ UP 87° R 0.063
- ⑤ UP 90° R 0.063
- ⑥ UP 94° R 0.063
- ⑦ DOWN 91° R 0.063
- ⑧ DOWN 90° R 0.063

DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	IE	DRAWING NO.	REV. B
MFG. APPR.	IE	D3649	SHEET 3 OF 3
APPROVED	IE	TITLE	SCALE
DE APPR.	IE	<b>BOTTOM PANEL ASSEMBLY</b>	1:5
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